

HATCH SEAL R&R

OBJECTIVE:

Remove and replace Hatch Seal.

LOCATION:

Installed: Hatch Bulkhead

Stowed: √Maintenance Database

DURATION:

PARTS:

Hatch Seal (P/N 683-13095-3)

MATERIALS:

Dry Wipes

Tape

Gloves, Disposable

Braycote, Grease

TOOLS REQUIRED:

Fluid System Servicer

Kit D:

1/8" Hex Head, 1/4" Drive

Kit E:

Ratchet 1/4" Drive

Driver Handle 1/4" Drive

Kit G:

(5-35 in-lbs) Trq Driver, 1/4" Drive

IVA Tool Box, Lid #1:

Nonmetallic Feeler Gauge

Magnifying Glass (7X)

REFERENCED PROCEDURE(S):

None

REMOVE

1. Inspect replacement hatch seals visually for nicks, burrs, cuts, gouges, etc. that would impair proper seal (Magnifying Glass 7X).

NOTE

1. If defects found use another seal assembly.
2. Hatch seal has four assemblies. Only failed will be replaced.
3. Hatch seal assemblies adjacent to either end of failed hatch seal assembly must be loosened prior to removing failed hatch seal assembly.

2. Loosen fasteners (seventeen) on failed Hatch seal.
3. Loosen, but do not release fasteners (thirty-four) on two seals adjacent to failed seal (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
4. Loosen fasteners (four) completely on end of one adjacent seal (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
5. Loosen fasteners (four) completely on end of other adjacent seal (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).

CAUTION

Do not damage bulkhead or adjacent seals when removing failed seal.

NOTE

Seal assembly contains lubricant. Avoid smearing on hands, glass, or hardware.

6. Separate failed seal.
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7. Clean bulkhead sealing surface to visibly clean level (Dry Wipe).

REPLACE

8. Don gloves.
9. Clean replacement hatch seal to visibly clean level prior to installation (Dry Wipe).
10. Apply thin film of Braycote to crowns and ends of both seal beads and seal metal substrate on bulkhead side of seal.
11. Doff gloves.

CAUTION

When placing replacement hatch seal on bulkhead ensure captive fasteners do not scratch bulkhead surface.

12. Position seal on bulkhead, tighten fastener in center of seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
13. Tighten fastener (two) on each end of replacement seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
14. Tighten fastener on end of one adjacent seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).

NOTE

Hatch seal assemblies must be held as close to bulkhead as possible to prevent damage to seals.

15. Grasp end of replacement seal by metal section and end of same adjacent seal in step fourteen and mate ends of seals.
16. Seat replacement seal to same adjacent seal in step fourteen by sliding joint approximately fifty percent beyond flush, then by returning to flush.
17. Tighten fastener on end of second adjacent hatch seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
18. Grasp other end of replacement hatch seal by metal section and end of second adjacent seal and mate ends.
19. Seat replacement seal other end to second adjacent seal in step fourteen by sliding joint approximately fifty percent beyond flush, then returning to flush.

NOTE

Tighten fasteners alternating sides (left and right) working from center fastener toward ends.

20. Tighten fasteners (fifteen) on replacement seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
21. Tighten fasteners (sixteen) on adjacent seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
22. Tighten fasteners (sixteen) on remaining adjacent seal two full turns (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
23. Torque fasteners (seventeen) on replacement seal to 12 ± 2 in-lbs ((5-35 in-lbs) Trq Wrench, 1/8" Hex Head 1/4" Drive).
24. Torque fasteners (seventeen) on adjacent seal to 12 ± 2 in-lbs ((5-35 in-lbs) Trq Wrench, 1/8" Hex Head 1/4" Drive).
25. Torque fasteners (seventeen) on remaining adjacent seal to 12 ± 2 in-lbs ((5-35 in-lbs) Trq Wrench, 1/8" Hex Head 1/4" Drive).
26. Clean all hatch seals to visibly clean level (Dry Wipes).
27. Don gloves.
28. Lubricate hatch-side of all hatch seal crowns, joints, and black rubber bumpers (Braycote).

29. Doff gloves.
30. Mark approximate location of latches on inner side of Hatch (Tape).
31. Close and latch Hatch.

NOTE

Gap between hatch plate and hatch seal metal substrate .015 to .025 inches at latches and .030 to .035 at each corner.

32. Measure gap at latches (eight) and corners (four) (Nonmetallic Feeler Gauge).

NOTE

Only latches out of tolerance need to be adjusted.

33. Open Hatch.
34. Translate to Rib side, close Hatch and operate till pointer is at "EQUALIZE" position.
35. Turn vertical adjustment screw one quarter turn CW to close gap, CCW to widen gap on each latch that is out of tolerance (Ratchet 1/4" Drive, 1/8" Hex Head 1/4" Drive).
36. Open Hatch.
37. Translate to dome side, close/latch Hatch and measure gaps (twelve) (Nonmetallic Feeler Gauge).
38. If gaps are within tolerance, continue with procedure.
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If gaps are not within tolerance, go to step 33.

39. Translate to Rib side with Fluid System Servicer.
40. Remove nut securing blind gland to Hatch bulkhead (Ratchet 1/4" Drive, 7/16" Socket).
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NOTE

Hatch seal integrity will be verified by leak test.

41. Attach FSS TBD adapter to FSS.
42. Attach FSS to bulkhead leak check port.

43. Close Hatch.
44. Operate FSS per operating procedures.
45. Draw vacuum through leak check port.
46. Leak rate of less than .0034 secs of air indicates seals acceptable.
47. Turn off FSS.
48. Disconnect FSS from bulkhead and adapter.
49. Tighten nut over blind gland until blind gland is seated with no free movement (Ratchet 1/4" Drive, 7/16" Socket 1/4" Drive).
50. Tighten nut over blind gland an additional eighth of a turn (Ratchet 1/4" Drive, 7/16" Socket 1/4" Drive).

POST MAINTENANCE

51. Stow failed hatch seal, tools, equipment.
52. Update Maintenance Database.